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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/769,169	01/24/2001	William B. Busa	99,826-A	5388

7590 05/21/2004
McDonnell Boehnen Hulbert & Berghoff
32nd Floor
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EXAMINER

ZEMAN, MARY K

ART UNIT	PAPER NUMBER
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1631

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/769,169

Applicant(s)

BUSA, WILLIAM B.

Examiner

Mary K Zeman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-15 are pending in this application.

Applicant's arguments filed 3/15/04 have been fully considered but they are not persuasive. Any rejections not repeated below have been withdrawn.

Claims 1-15 remain rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter for the reasons set forth in the previous office action.

Applicant has amended claim 1 such that the claim recites "determining metrics representative of possible inferences" and argues that such metrics and inferences are a concrete tangible and useful result. This is not persuasive, as the metrics and inferences are merely data values that must be further interpreted or manipulated to be useful. These do not meet the standard. Methods which have been shown to meet the standard include methods that produce a dollar value, a yes/no answer, and a buy/sell recommendation.

As set forth previously, the claims are drawn to manipulations of data, wherein the result is not concrete, tangible or useful. The steps of claim 1 ends with "incremented co-occurrences," or a "plurality of inferences" or optionally some sort of "connection network" each described mathematically, which are not immediately concrete, tangible or useful results. MPEP 2106: "For such subject matter to be statutory, the claimed process must be limited to a practical application of the abstract idea or mathematical algorithm in the technological arts. See *Alappat*, 33 F.3d at 1543, 31 USPQ2d at 1556-57 (quoting *Diamond v. Diehr*, 450 U.S. at 192, 209 USPQ at 10). See also *Alappat* 33 F.3d at 1569, 31 USPQ2d at 1578-79 (Newman, J., concurring) ("unpatentability of the principle does not defeat patentability of its practical applications") (citing *O'Reilly v. Morse*, 56 U.S. (15 How.) at 114-19). A claim is limited to a practical application when the method, as claimed, produces a concrete, tangible and useful result; i.e., the method recites a step or act of producing something that is concrete, tangible and useful. See *AT & T*, 172 F.3d at 1358, 50 USPQ2d at 1452. Likewise, a machine claim is statutory when the machine, as claimed, produces a concrete, tangible and useful result (as in *State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601) and/or when a specific machine is being claimed (as in *Alappat*, 33 F.3d at 1544, 31 USPQ2d at 1557 (in banc))."

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Claims 1-15 remain rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant argues that the amendment to the claims obviate the rejections, or that the specification provides enough definition for the claims as set forth. This is not completely persuasive. While the claims are read in light of the specification, the limitations of the specification cannot be read into the claims. Without knowledge as to what processes Applicant intends to be used in the particular steps, the metes and bounds of the claims cannot be determined.

Specifically, in claim 1, several of the steps lack detail required to carry out that step such that the method can be carried out. In the filtering step (step c) nothing sets forth what is to be filtered out, or how the filtering is to be done. This is not trivial, as the generation of relevant inferences can depend upon information that is filtered or retained.

The determining step (step d) fails to set forth how one is to determine if the set is in a stored database. There are no steps linking the method to such a stored database, nor is there any indication as to how presence or absence of a particular set of parsed information is to be determined. The database does not have to be parsed in a similar manner. There is no indication that the database contains co-occurrence counts for any of the stored information such that they can be incremented as required by the determining step.

Finally, in the generating step (step h) it is unclear how one would “use” the results of an analysis method to infer a relationship. The specification indicates that a multiplicity of statistical analysis methods could be used, each of which gives differing types of results that are not necessarily interchangeable. How those results are to be used is not clearly set forth.

Claims 1-3, 5, and 7-15 remain rejected under 35 U.S.C. 102(b) as being anticipated by Rip, A. (1984: PTO-1449) for the reasons set forth in the previous office action.

Applicant seems to agree that Rip discloses the same analysis methods of the invention. Applicant alleges that Rip does not set forth that biological or chemical names can be indexed. This is not persuasive. Rip notes that “co-word analysis was used and amended to re-analyze the

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data describing the contents of articles in a biotechnology core journal.” (p383). The contents of the journal include biological and/ or chemical molecules. Words representing chemicals are chemical names. One example, Glucose, referenced in Figure 1 and page 385, is an acceptable chemical name for the chemical C₆H₁₂O₆.

As set forth previously, Rip et al. (Scienometrics Vol 6, No 6 (1984) pages 381-400) disclose computer-based methods of generating inferences and connections between words representing chemicals, or biological molecules such as genes, enzymes, or proteins. Rip creates a structured database of literature articles from particular sources. Records in the database are extracted and the words are analyzed by a co-occurrence method (p383). The user can pick the words or types of words of interest, i.e. proteins or chemicals, or genes. As the pairs are extracted and recorded, counts of pairs that repeat over several database records are incremented (p385, and Table 1). A connection network can be generated (Figure 1). Statistical analyses of the co-occurrences and subsequent connection networks can be performed (p387-388). This meets the limitations of claim 1, 3, 5, 8-11 and 15. Trivial associations can be excluded or ignored (p387) meeting the limitations of claim 13. These methods can be performed on a computer having appropriate software, thereby meeting the limitations of claim 2, and the resulting information can be stored and displayed in a manner containing “nodes” and “arcs” as set forth in claims 12, 7 and 14.

Claims 4 and 6 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Rip et al (1984) as applied to claims 1-3, 5, and 7-15 above, in view of Chen et al. (1997) for the reasons set forth in the previous office action.

Applicant seems to agree that Rip discloses the same analysis methods of the invention. Applicant alleges that Rip does not set forth that biological or chemical names can be indexed. This is not persuasive. Rip notes that “co-word analysis was used and amended to re-analyze the data describing the contents of articles in a biotechnology core journal.” (p383). The contents of the journal include biological and/ or chemical molecules. Words representing chemicals are chemical names. One example, Glucose, referenced in Figure 1 and page 385, is an acceptable chemical name for the chemical C₆H₁₂O₆.

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Rip does not specify that the data can come from particular structured databases such as Medline, nor that trivial names of the molecules can be ignored.

Chen et al. (Journal of the American Society for Information Science, Vol. 48 No. 1 pages 17-31 (1997)) disclose methods of extracting information from structured literature databases such as Medline (see page 21). Names of Worm genes were extracted, and filtered such that trivial molecule names were excluded from analysis (page 21 column 2). Chen then performs a co-occurrence analysis on the extracted information, in a manner similar to that of Rip et al. (page 22). These co-occurrences were used to build links and relationships between the extracted terms.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have used the widely available and standard databases of Medline or PubMed, as the structured literature database in the methods of Rip et al. One would have been motivated to use these databases as they are well known, they index almost all literature relating to chemical or biological molecules, and they use a standard format. One would have had a reasonable expectation of success in using these databases in the methods of Rip, because these

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databases encompass many fields of science offering the greatest chances to discover potential relationships between entities.

It further would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have used a filter that removes certain trivial or non-helpful chemical or biological names from records, as done by Chen et al in the methods of Rip et al. One would have been motivated to do so to limit the number of trivial or incorrect associations between names that are confusing, or that can relate to more than one distinct entity. One would have had a reasonable expectation of success in doing so, as the existence of confusing or trivial names for various entities is well known, and understood by those of skill in the art.

Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Conclusion

No claim is allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary K Zeman whose telephone number is (571) 272 0723.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael P Woodward can be reached on (571) 272 0722. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on the contents of the electronic file wrapper, or on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MARY K. ZEMAN
PRIMARY EXAMINER

del 63
5/19/04